

ABSTRACT OF THE DISCLOSURE

A sputtering apparatus and a sputter film deposition method, which includes a conventional magnetron and an AC magnetron for deposition of a low refractive index film,  
5 and a conventional magnetron and an AC magnetron for deposition of a high refractive index film, performs film deposition by each of the AC magnetrons until having achieved 90% of a designed film thickness, and then performs the film deposition only by each of the  
10 conventional magnetrons, and which can control the film thickness with high precision and have excellent productivity.